WAQF-BASED MICROFINANCE: REALIZING THE SOCIAL ROLE OF ISLAMIC FINANCE

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1. INTRODUCTION

Eradication of poverty, socio-economic justice and equitable distribution of income are among the primary goals of Islam and should be unyielding features of an Islamic economic system (Chapra 1985). The Islamic financial system should also reflect these objectives of Islam. Siddiqi (2004) and Khan (1997) point out the philosophical basis of the Islamic financial system lies in *adl* (social justice) and *ihsan* (benevolence). The implication of these concepts is "taking care of those who cannot be taken care of by the market, who cannot play with economic forces or do not have access to economic means to enable them to exploit the economic opportunities around them" (Khan 1997, pp. 12-13). As such, it is imperative on Islamic financial sector to include social dimensions in their operations along with the normal commercial financing practices.

The social role of Islamic financial sector can be best exemplified by providing finance to the poor so as to increase their income and wealth.[1] Specialized poverty focused MFIs provide much-needed finance to microentrepreneurs resulting in the increase of their income levels and wealth. MFIs innovative group-based format introduces a social collateral minimizing the credit risks and ensuring higher recovery rates. As most microfinance schemes have an integrated social development program, adopting the approach of microfinancing can imply a much broader program of wealth creation for the poor and bring about development.[2]

Contemporary Islamic finance, however, has been largely disengaged from microfinance. On the one hand, most microfinance institutions (MFIs) are not Islamic as their financing is interest based. On the other hand, Islamic financial system has been dominated mainly by Islamic banks. It has been observed that finance from commercial banks overwhelmingly tend to go to larger firms. This may be true for Islamic banks as well, as they are modeled in line with conventional banks. The lack of development of financial institutions serving the poorer segments of the society has raised concerns.[3] As the Islamic economic system pays particular attention to income distribution, there must be a mechanism for smaller firms or microenterprises to have access to finance. This can be done either by Islamic banks that open special schemes/windows for financing smaller firms and enterprises, or by establishing specialized microfinance institutions.

Elgari (2004) maintains that had the Islamic civilization been flourishing, it would be capable of producing solutions and a vibrant society would have created

[1] Khan (1997) suggests a variety of activities like *qard-hasan*, financing housing, meeting basic needs, and promoting and financing small entrepreneurs. All these aspects, however, can be covered in a comprehensive integrated program with focus on microfinancing.

[2] For an extensive study on microfinance, see Hulme and Mosley (1996a &b), *Journal of International Development* (Vol. 8, No. 2), Kimenyi, et.al. (1997), Otero and Rhyne (1994), and Schneider (1997).

[3] In a Forum held in Kuwait in 2006 to discuss issues related to the 10 Year Master Plan for the Islamic Financial Industry, many people pointed out the lack of involvement of the sector in microfinance. To discuss the problems and constraints related to the issue, the theme of the following year's (2007) Forum was selected to be Microfinance.

institutions manifesting the core values of the Islamic system. The financial institutions arising from this Islamic root would reflect the features of justice, equity, and social peace. Zarqa (1988) points out that there are various institutions and structures that Islam has instilled to redistribute income and wealth for the fulfillment of the basic needs for all in the society. The institutions include, among others, *zakah*, *waqf* and *qard hasan*. Siddiqi (2004) asserts that the ingenuity of the Islamic financial sector would be to integrate the vision of a moral society and socially responsible finance into functioning institutions. In line with this assertion, this paper studies the prospects of a *waqf*-based poverty-focused microfinance institution.

Suggestions of establishing *waqf*-based financing institutions serving the poor have been made by various scholars. Cizakca (2004) suggests a model in which the concept of cash *waqf* can be used in contemporary times to serve the social objectives in the society. One use of cash *waqf* would be to provide microfinance to the poor. Similarly, Elgari (2004) proposes establishing a nonprofit financial intermediary, the *qard hassan* bank that gives interest free loan (*qard hassan*) to finance consumer lending for the poor. The capital of the bank would come from monetary (cash) *waqf* donated by wealthy Muslims. Kahf (2004) and Ahmed (2003) propose establishing a microfinance institutions based on *zakah*, *awqaf*, and *sadaqat*. They suggest that the returns from *awqaf* and funds from *sadaqat* can be used to finance productive microenterprises at subsidized rates. In addition, *zakah* can be given out to the poor for consumption purposes to avoid diversion of funds from productive heads. Unlike the previous papers, this paper studies the economics of microfinancing and discusses the sustainability and operational issues of a *waqf*-based MFI in details. To do so, we first outline the features of the conventional MFIs and critically examine their strengths and weaknesses. Drawing on the strengths of conventional MFIs, an alternative of Islamic microfinancing based of *waqf* is then outlined.

The paper is organized as follows. Section 2 briefly outlines the nature and uses of *waqf* during historical times. Given the important role of development that microenterprises play in poverty alleviation, Section 3 argues for social intermediation by specialized microfinance institutions. The section presents the basic features and operations of conventional MFIs. In section 4, we discuss the economics of financing microenterprises, and then point out the sustainability problems that MFIs face. Section 5 presents the basic model of a *waqf*-based Islamic MFI pointing out how it resolves the sustainability problems. This is followed by a section that discusses the scope of operations and issues related to managing risks in *waqf*-based Islamic MFIs. Section 7 discusses some other approaches of raising funds for Islamic MFIs. Section 6 concludes the paper.

2. *AWQAF*: NATURE AND USES[4]

Muslims are encouraged to create *sadaqah* that keeps producing benefits/revenues to its targeted objectives. *Waqf* is also termed "*sadaqah jariyah*" or "continuous *sadaqah*". The *waqf* created by giving away an asset that have feature of perpetuity on a permanent basis. These *sadaqah* can be religious like establishing a mosque, or for social purposes like building a house for the wayfarer or digging of river/canal or a *sadaqah* gave during his/her life that continues (giving its benefits) after his/her death.

[4] Discussions on this section are based on Ahmed (2004) and Kahf (2004).

An important characteristic of *waqf* relates to its objective, that is, the idea of *birr* (doing charity out of goodness). The objective of *waqf* may be for the society at large, including the provision of religious services, socio-economic relief to the needy segment, the poor, education, environmental, scientific, and other purposes. Many scholars term the ownership of *awqaf* assets/properties "as if it were owned by God." The founder (*waqif*) determines the objectives for which the property made into *waqf* can be used and the way its fruits, services and revenues can be distributed. The founder also determines the *waqf* management and process of succession of managers. The founder can impose any restrictions or qualifications he/she likes on his/her *waqf*, etc. Most *awqaf* are perpetual and very often this is emphasized in the *waqf* deeds.

The history of *awqaf* is very rich with prominent achievements in serving the poor in particular and enhancing the welfare in general. Various kinds of awqaf were established including those for public utilities, education and research, and health care. Educational *awqaf* also covered scientific research that was not restricted to Islamic studies. There were *awqaf* assigned specifically for research in science, physiology, pharmacology, mathematics, astronomy, etc. Hospitals and medicines are one of the most famous sub-sectors of *awqaf*. Muslims continued to establish *awqaf* hospitals and health care centers until the first part of the 20th century when the *Waqf* Children Hospital of Istanbul was founded. Similarly, there were waqf of grain to be used as seeds, and forms of waqf to provide loans to persons who need financing and providing services and supplementary income to low income people.

The significance of the *awqaf* in Muslim societies of the past is evident from information available on the size of these institutions. In certain Muslim countries *awqaf* reached one third or more of total of cultivable land and other properties. The first land survey in Egypt conducted during Muhammad 'Ali's rule indicated that 600,000 were *awqaf* out of a total of 2.5 million feddan (acre) of cultivable land; most of these *awqaf* were for mosques and education and a great chunk was for al-Azhar itself. The large investments in the social sector succeeded in transforming the society and empowering the poor segments of it. Education, offered almost only by *awqaf*, enabled the poor move up the economic ladder and obtain high levels of economic and political power.

While most of *waqf* created are real estate, the cash *waqf* dates back to as early as the turn of first century of *Hijrah*. Cash *waqf* had two forms. First, cash was made into *waqf* to be used for free lending to the beneficiaries and second, cash was invested and its net return is assigned to the beneficiaries of the *waqf*. Cizakca (2004) discusses how cash *waqf* were used during the Ottoman period in microfinancing. Some of the generous wealthy people established charitable cash endowments (*waqf*) which was lent to various borrowers not exceedingly 20. While ownership of houses of borrowers were transferred as collateral, they would continue to stay in them and pay rental to the waqf. When the capital was returned the ownership was reverted to the borrower. The rent collected or profit was distributed into three parts. A third of the profit was used to cover administrative costs, a third for charitable purposes for which the *waqf* was created, and the remaining third was added to the original endowment to protect the real value from inflation.

3. FINANCING MICROENTERPRISES: NEED FOR SOCIAL INTERMEDIATION

Microenterprises and smaller firms do not have any access to funds from traditional financial institutions. The underlying theoretical explanation for this phenomenon lies in the traditional problems of asymmetric information in financial intermediation. A financial institution raises funds and invests these in activities that yield returns in the future. In doing so, the financial institutions face number of information related problems and risks inherent in financing. Before financing decision is made, the adverse selection problem has to be resolved by identifying the right projects to ensure the returns from investments. After the funds are disbursed, the moral hazard problem has to be tackled to safeguard that the funds are not misused. This can be done, among others, with the help of monitoring, which is costly. To minimize the credit risk, financial institutions require a collateral that can be tapped into in case of default. To ensure profitability the costs (both financial and operational) have to be kept at the minimum. Note that operational costs include those incurred for monitoring to avoid the moral hazard problem and minimize credit risks.

In case of small firms with no prior history, the asymmetric information is severe from the financiers' perspective. Bennett (1998) points out some barriers that accentuate the asymmetric information problems in case of smaller enterprises in developing countries. Physical barriers of poor infrastructure like lack of markets, roads, power, communications, etc., can worsen both the adverse selection and moral hazard problems. Physical constraints inhibit the financial institutions to gather information on their prospective clients and once credit is advanced, it is difficult to monitor the use of the funds. Socioeconomic factors of clients like low numerical skills due to illiteracy, caste/ethnicity/gender aspects preventing interaction also add to the adverse selection problem. Microentrepreneur's lack of collateral due to poverty can increase the moral hazard problem. These barriers would make assessment of projects and monitoring the use of loans very costly. Furthermore, as the size of the loan for microenterprise is small, the administering cost of per-unit loans increases. These factors make it economically non-viable for traditional financial institutions to offer credit to microenterprises.

Given the problems in financing microenterprises and also the fact that these small-scale enterprises are important means to increase employment and reduce poverty, there is a need for a social financial intermediation of funds for the microentrepreneurs. Bennett (1998, pp. 106-7) points out two approaches of financing microenterprises. First, the linking approach under which conventional financial institutions are linked to the target group (i.e., the poor) through some intermediary. The other approach is to provide microcredit through specialized organizations, like NGOs, government agencies, cooperatives, and development finance institutions.

Almost all of the financing for microenterprises in recent times have come from latter institutions that cater to the needs of the poor. Whatever the type of the institution providing the finance, these institutions have to address the fundamental problems related to their operations and sustainability. To ensure income/revenue, these institutions have to mitigate the credit risk and reduce moral hazard problem. To be viable, the costs of operations have to be kept at a minimum. Thus, the sustainability of institutions financing poor microenterprises have to mitigate credit risk by ensuring that microentrepreneurs repay the principal with returns in the

absence of physical collateral, keep costs to a minimum for economic viability of the institution.

3.1. MFIs: Specialized Financial Institutions

Though the importance of financing small-scale enterprises has been felt for a long time, the concept of group-based poverty focused microfinance is a relatively new concept.[5] Pioneered by the Grameen Bank in Bangladesh, group-based MFIs are banks for the poor and operate quite differently from the conventional commercial banks. Whereas commercial banks are profit maximizing firms, MFIs are either government or non-government organizations (NGOs) formed to provide the poor with their much needed finance. Given this nature, most MFIs have a social development program along with its credit facilities.

To get finance from these institutions, the client or beneficiary has to be poor.[6] A person must form a group of five like-minded people with similar socioeconomic status to get credit. Male and female groups are formed separately and relatives cannot be in the same group. A group is usually trained for a couple of weeks to be familiar with the rules and procedures of the MFI. A number of groups are federated into a center with a center chief and deputy center chief elected from amongst them. Weekly meetings of the center are held at a convenient place in the locality. All members (i.e., beneficiaries) of the center are required to attend these meetings. An MFI official attends these weekly meetings to conduct the banking transactions and other business of the center.

MFIs extend credit of small amounts at a reasonable rate of interest. The loan is paid back in one year in (fifty) weekly installments. Credit is provided to the poor without any physical collateral. Instead, social collateral is introduced by forming groups. Loan repayment by an individual member of a group is the collective responsibility of all the members in the group and default by a member disqualifies all members to get new loans. As a result, members in the group monitor the activities of each other and peer pressure induces the repayment of the loan. This format of peer monitoring resolves the problem of asymmetric information and reduces transaction costs of monitoring (Huppi and Feder 1990, Morduch 1999, Stiglitz 1990). Most MFIs have various (forced) savings programs. Sometimes, MFIs also extend credit to individuals for building houses and to a group or center for collective enterprise.

4. ECONOMICS OF MICROFINANCING

The balance sheet of a typical MFI is shown in Table 1. While initial start-up capital (E) for the institution comes from sponsors, deposits (D), and funds from external sources (F) constitute the liabilities of the MFI. Other than cash held, the asset side of the MFI includes funds given away as loans L. Note that L equals nl, where n is the number of creditors and l is the average size of loan.

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[5] Though different approaches to microfinance have evolved, the format discussed here is that of Grameen Bank, which serves as the dominant model for most group-based microfinance institutions (Morduch 1999).

[6] Different MFIs define their target group in different ways. For example, to be eligible to get credit from Grameen Bank a household must own less than 0.4 acres of land and must not have assets exceeding the market value of one acre of cultivable land.

Table 1: Balance sheet of a Typical MFI

Asset	**Liability**
Cash (C)	Deposits (D)
Loans (L)	Funds from external Sources (F)
	Equity (E)

Profitability of MFIs will depend on the revenues generated and the costs incurred. Profit (?) of a conventional MFI is defined as difference between its total income or revenue (TR) and total costs (TC). That is,

$$? = TR - TC \quad (1)$$

Total costs of a MFI will include financing costs (BC) and operating costs (OC). The financing costs depends on the sources of funds. MFIs may find it difficult to attract deposits as commercial banks do. As the MFIs grow, the savings of beneficiaries accumulate, which can then be recycled in financing microenterprises. The time needed for an MFI to operate its activities based solely on beneficiaries' savings, however, may be very long. In the absence of deposits (other than savings of beneficiaries), bulk of the funds of the MFIs is from external sources. Though sometimes external funds are provided at subsidized rates, certain conditionalities are attached to it. Other than borrowing funds (F) from external sources, MFIs can offer deposits facilities that would include savings of members (D). If i_f and i_s are the interest rates paid on funds provided by external sources and deposits avers respectively, then borrowing costs equals,

$$BC = i_f F + i_s S.$$

The operating costs comprise a variable component (wages to employees) and a fixed component (rent, utilities, etc.). As the size of the loan for microenterprise is small, the administering cost of per-unit of loan is high. Thus, operating costs (OC) includes variable costs (wages) and fixed costs. Note that these costs can be further divided as those incurred at the field level and those that are incurred away from the field (costs at head office and regional offices). Thus, total costs of an MFI equals,

$$TC = OC + i_f F + i_s S. \quad (2)$$

Income of MFI is derived from the interest earned from loans to the beneficiaries (L). As mentioned above, the amount of loan given out by the MFI equals the average loan amount given (l) times the number of beneficiaries (n). The repayment (or recovery) rate of loans (?) depends on, among others, the actual use of borrowed funds in the economic activity. The revenue side can be managed by ensuring repayments of loans. This can be done by, among others, minimizing the credit risk and the moral hazard problem. Diversion of funds (to non-productive activities) increases the probability of default. Diversion of funds can be minimized and repayment-rate improved with better overall supervision and monitoring of the loan. For a given number of clients, supervision, and monitoring improve with more employees at the field level. In other words, as field level employees increase, the repayment rate (?) is expected to rise. Wages paid to field level employees can affect their incentive to work and affect recovery rates. Furthermore, higher interest rate charged for credit (i_l) increases the probability of default. The total income of the MFI can be written as:

$$TR = ?\, i_l L = ?\, i_l nl. \qquad (3)$$

Using the definitions of costs and income from equations (2) and (3) in equation (1), we can write the profit of a MFI as,

$$? = ?\, i_l nl - OC - i_f F - i_s S, \qquad (4)$$

The effect of an increase in the interest rate on loans (i_l) on the profit will be positive if the resulting increase in income offsets the decrease in income due to lower repayment rate. The effect of an increase in the employees in the field improves the supervision and monitoring of the use of credit and hence increases the income by raising the recovery of loans. An increase in the beneficiaries (n) will affect profit positively if the returns from them are greater than the decrease in recovery rate (due to increased difficulty in supervision). Finally, larger average loan size (l), fewer non-field workers, lower interest paid to savers (i_s) and lower operating costs (OC) will increase the profitability of the MFI.

4.1. Sustainability of MFIs

While a large literature exists that shows the success of MFIs, some recent studies show failure of these institutions in reaching some of their objectives.[7] The problems relevant to sustainability and reaching the poor are given below.

a) *Mitigating Credit Risk*: The credit risk is minimized by MFIs by replacing the physical collateral with the social collateral. Group based microlending acts as social collateral reduces the credit risk that exists in financial intermediation. The peer pressure from the group members and the center is a low cost and effective way of ensuring repayments. Furthermore, it is easier for the poor to pay small weekly installments instead of a large lump-sum amount when the loan is due. This also reduces the credit risk and ensures the MFI its returns.

b) *Solving Moral Hazard Problem:* As money is given out to the poorer sections of the population, it has been observed that in some cases loans taken from MFI are often used for purposes other than those the loan is sanctioned for (Rahman 1999, p. 75). When loans are used for non-productive purposes, the chances of default increase. Buckley (1996, p. 390) reports that in 1993, 46 percent of the Malawi Mudzi Fund's (a MFI in Malawi) borrowers were in arrears (did not pay installments between 1 to 4 times) because they diverted the funds for consumption purposes. Among the defaulters (those who did not pay more than 4 installments), the corresponding number was 33 percent.

c) *Economic Viability:* Ideally microfinancing would be a "win-win" situation, if the MFI operates at a profit and the poor benefit from the credit program. This, however, is not the case for most MFIs (Morduch 1999). Due to lack of fund mobilization and the high administrative cost most MFIs are not economically viable. For example, Bennett (1998, p. 116) reports that administrative cost of five MFIs in South Asia is in the range of 24 percent to more than 400 percent of per dollar lent. Reed and Befus (1994, p. 190) study five MFIs and find average return

[7] For accomplishments of MFIs see Bornstein (1996), Fuglesang and Chandler (1993), Goetz and Gupta (1996), Hashemi, et. al. (1996), and Hossain (1983, 1987).

on assets for three of these below 2 percent, one at 3.5 percent and the other at 14.6 percent. Hashemi (1997) and Khandker, et.al. (1995) point out that Grameen Bank would operate at a loss without grants. A Subsidy Dependence Index (SDI) developed by Yaron (1997) indicate that in 1996 Grameen Bank would have to increase its lending interest rate by an additional 21 percent in order to breakeven without subsidies (Hashemi 1997). Similarly, Hulme and Mosley (1996a, p. 52) find that 12 out of 13 MFIs from six countries have positive SDI ranging from 32 percent to 1884 percent.

We see from the above discussion that while conventional MFIs have been able to solve the problem of credit risk by introducing social collateral by forming groups and weekly repayments, it has not successfully resolved the problems of moral hazard and economic viability. Specifically, group-based microlending acts as social collateral and lessens the asymmetric information problem that exists in financial intermediation. Given these strengths and weaknesses of conventional MFIs, we next discuss the nature of a waqf-based microfinance institution that operates under Islamic principles and values.

5. *WAQF*-BASED ISLAMIC MFIs

Some Islamic MFIs have been initiated in a few countries. These institutions have adopted the group-based lending format of the conventional MFIs and adapted Islamic principles and values.[8] While these MFIs use various Islamic modes of financing on the assets side, they face certain problems on the liabilities side. A survey of Islamic MFIs in Bangladesh identify lack of funds as one of the major constraints to growth and efficient operations (Ahmed 2002). The same survey identifies some problems Islamic MFIs face in obtaining funds from external sources. Though some funds are available from government agencies, they impose certain terms and conditions. Some of these terms and conditions are contrary to Islamic principles and limit the flexibility in the operations of Islamic MFIs. For example, the funds are given on interest and the MFIs may be required to recover a certain fixed rate of return on their investments. As a result, funds from these sources cannot be employed in microfinancing with certain Islamic modes of financing like *mudarabah* and *musharakah*.

Other than limiting the expansion of operations of MFIs, lack of funds has other detrimental implications. The MFIs cannot hire sufficient workers at competitive wages. Lack of funds also means employing fewer field level workers, lowering the employee-beneficiary ratio, adversely affecting supervision and monitoring. Paying lower wages also implies that they can employ relatively low productivity workers. Low pay sometimes induces employees with experience to move on to other MFIs paying better pay and benefits. These factors increase the probability of default and lowering the expected income of MFIs. To resolve some of the afore-mentioned problems, a *waqf*-based Islamic MFI is suggested. The balance sheet structure and sustainability issues of such institution are discussed next.

5.1. Financial Aspects of Waqf-based Islamic MFI

[8] For a discussion on Islamic MFIs in Bangladesh see Ahmed (2002).

The balance sheet of the proposed *waqf*-based Islamic MFI is given in Table 2. On the liability side, cash *waqf* (*W*) will constitute the capital of MFI. Along with the *waqf* endowment donated by the founders, additional *waqf*-funds can be generated by issuing *waqf* certificates (*S*). Other than the savings of the beneficiaries, the MFI can also attract deposits from the public by providing opportunities of *Shari'ah* compatible saving facilities (*D*). These deposits will take the form of *mudarabah* or profit-sharing contracts.

Table 2: Balance sheet of a Waqf-based Islamic MFI

Asset	Liability
Cash (*C*)	Savings Deposits (*D*)
Assets (A)	*Qard hasan* deposits (*Q*)
-Low-risk assets (*F*)	*Waqf* Certificates (*S*)
-Microfinancing (M)	*Takaful* reserves (*T*)
Loans- *Qard* (*Q*)	Profit Equalizing Reserves (*P*)
Investments (*I*)	Reserves/Economic Capital (*V*)
[*murabahah, ijarah, salam, stisna, mudarabah, musharakah*]	Capital-*waqf* (*W*)

MFIs need to create some special reserves to insure against the risks arising from negative shocks. The first type would be the *takaful* reserve (*T*) created by small weekly/monthly contributions of the beneficiaries. This *takaful* reserve would be used to support beneficiaries who are unable to pay their dues on time due to some unexpected problems like a natural calamity or death in the family. Second, a profit equalizing reserve (*P*) will be established by deducting a small percentage of the profit-share of depositors during the relatively profitable periods of operations. This reserve will be used to boost rates of returns on deposits during periods when the returns get depressed. Similarly, the MFI would build up a reserve (*V*) from its surplus that can serve as economic capital. This reserve can be used to cushion any negative shock that may affect the financial position of the institution adversely.

Other than cash (*C*), the assets of a *waqf*-based Islamic MFI will comprise different types of non-interest bearing financial instruments. Due to reasons discussed below, a *waqf*-based Islamic MFI will hold a combination of low-risk fixed-income assets (*F*) along with microfinancing activities (*M*).[9] Microfinancing will include investments (*I*) and *qard* (*Q*). For investments purposes, a variety of Islamic modes of financing may be used. The type of financing instrument will depend on the type of activity for which funds are granted. The economic activities that microenterprises usually engage in production, trading, and providing (transport) services. Some of the appropriate Islamic modes of financing for these activities are pointed out below.

The principles of Islamic financing can be broadly classified as partnerships (*sharikat*) and exchange contracts (*mu'awadat*).[10] Various kinds of financing arrangements can be used to finance different kinds of activities. *Musharakah* principle can be adopted in production (agricultural and non-agricultural). The Islamic MFI can provide part of the financial capital to produce an output and in return

[9] Low-risk and risk-free are used to identify these class of assets would include either deposits in Islamic banks on placement in *murabahah* funds.

[10] Detailed expositions of the different principles of Islamic financing are found in Kahf and Khan (1992) and Ahmad (1993).

receive a share of the profit. In trading, the Islamic MFI and the client can jointly finance the purchase and selling of a certain good and distribute the profit. Production undertaken under *mudarabah* principle would imply that the Islamic MFI finances and the client manages the project. In agricultural production, output sharing can take the form of *muzara'a*.

The Islamic MFI may fund the purchase of irrigation equipment, fertilizers, etc., which the landowner uses on his land to cultivate a certain crop. The harvested crop is then shared by the landowner and the Islamic MFI at an agreed ratio. Other than profit-sharing principle discussed above, *murabahah* and *ijarah* forms of financing can also be used in production. For example, if a client is in need of initial physical capital (equipment, gadgets, etc.), the Islamic MFI can buy the items and sell these to the client at a mark-up (*murabahah*). In agriculture, the item may be a cow or poultry that the Islamic MFI sells at a mark-up. The client pays back the price in agreed upon installments in the future. Similar transaction can take place under a leasing (*ijarah*) contract.

In trading, profit sharing schemes and deferred trading contracts can be used. Under profit sharing scheme, the Islamic MFI becomes a partner in the trading business and gets a share of the profit. The *murabahah* principle can also be applied where the items to be traded are first bought by Islamic MFI and then sold at a mark-up to the clients. The clients pay back the Islamic MFI once they sell the goods. In transport services, both mark-up principle and the leasing principle can be applied. For example, if a client wants to buy a rickshaw, the Islamic MFI can purchase it and sell it to the client at a mark-up. The client then pays the price on an agreed installment plan. Alternatively, hire-purchase arrangement can be made in which the client pays rent plus a part of the capital in his installments. Once the installments are fully paid, the client becomes the owner of the rickshaw.

Given the small scale nature of the operations of the microentrepreneurs, it may be difficult for the Islamic MFI to use either sale-based or partnership modes of financing.[11] It is too costly (in terms of man-hours) and at times impossible to buy the goods/assets that beneficiaries want. For example, it becomes very difficult to accompany a beneficiary who may want a particular kind of good sold in a far off market. One way to overcome this is to use profit-sharing modes of financing. The sharing modes of financing, however, have their own problems. The main problem is the moral hazard problem arising from false underreporting of profit as it is very difficult to assess the financial accounts. This problem can be mitigated by supervising the operations and monitoring accounts of the beneficiaries. Supervision and monitoring, however, is costly. In some special cases, the MFI can use loans (*qard*) that charge service costs only. These loans would be used for poorest sections of the population and for activities where other modes of financing cannot be used.

5.2. Sustainability of Waqf-based Islamic MFI

[11] See Ahmed (2002) for a discussion on the responses from a field survey on problems of using Islamic modes of financing in microfinancing.

We discuss the status of *waqf*-based Islamic MFIs with regard to the three fundamental problems related to operations and sustainability of financing microenterprises next.[12]

a) *Mitigating Credit Risk*: As mentioned above, the innovative operational format of MFIs suits the poor, whose lack of physical collateral disqualify them to borrow from traditional commercial banks. Waqf-based Islamic MFIs will retain the innovative format of operation of conventional MFIs and oriented the program towards Islamic principles and values. Thus, like their conventional counterparts, Islamic MFIs have largely resolved the credit risks through social collateral of groups and weekly repayments.

b) *Resolving Moral Hazard Problem*: Islamic MFIs have some inherent characteristics that can resolve the moral hazard problem faced by conventional MFIs pointed above. The main mode of financing used by the Islamic MFIs is *murabahah*/*bai-muajjal* or *ijarah* (leasing). These instruments involve real transaction and instead of cash being given out, asset/good is exchanged. As a result, the opportunity of diverting funds for non-productive uses other than that requested for is reduced, if not eliminated. This increases the profitability of the MFI by decreasing the default rate.

c) *Economic Viability*: In cases where Islamic MFIs get funds from traditional interest-based outlets, the financing costs appear to be high. For example, the financing costs of two small Islamic MFIs, Noble and Rescue in Bangladesh, were 35.8 percent and 12.5 percent of the total expenditures respectively (Ahmed 2002). As the bulk of the *waqf*-based Islamic MFIs funds will come from *waqf* endowment, the financing costs of these institutions will be significantly lower than their conventional counterparts. Given the philanthropic nature of these funds, no returns are expected by contributors. While Islamic MFIs will pay returns on funds coming from external sources like deposits and beneficiary savings, the *waqf* component of funds will significantly reduce the financial costs and improve financial viability of the institution.

The above discussion shows that by adopting the group based financing of the conventional MFIs, Islamic MFIs have resolved the problem of credit risk. Furthermore, the use of Islamic modes of financing linked to real transactions subsides the moral hazard problem by preventing diversion of funds for other purposes in Islamic MFIs. Furthermore, Islamic MFIs can tackle the economic viability problem by reducing their financing costs significantly.

6. OPERATIONAL AND RISK MANAGEMENT ISSUES OF *WAQF*-BASED MFI

Due to the nature of the instruments and legal requirements, a *waqf*-based MFI will face certain unique operational and risk management issues. On the asset side, microfinancing (*M*) can take place as investments (*I*) or qard (*Q*). While investment (*I*) yields returns, the returns on loans (*Q*) cover the actual costs only. As *qard* investments do not yield any positive returns, these have to be financed from *waqf* funds. Thus, while the investments of the MFI will be financed by both the deposits

[12] These conclusions are based on a survey on Islamic MFIs by Ahmed (2002).

and *waqf*, loans will be financed by the latter source only. On liability side, deposits being *mudarabah* contracts share the risks on investments. However, due to withdrawal risks, deposits are expected to yield positive returns.[13] An essential feature of *waqf* is that the corpus of the endowment (W) must be kept intact, implying that it cannot be put to risk of loss. This feature of *waqf* calls for not only to manage the risks in an appropriate way but also to separate the risks arising from financing assets using *waqf* funds and deposits.

As for the legal requirement that the corpus of the *waqf* should remain intact, the easiest way to do this is to invest the endowment in some safe low-risk instruments and use the returns for financing purposes. Unless the cash *waqf* is large, however, the amount available for mircofinancing may be small. This may not be a problem for smaller MFIs, given that microfinancing requires small amounts to be given to many microentrepreneurs. For example, a sample of three Islamic MFIs had disbursements of less than an average USD 70 given 2,515 and 6,793 beneficiaries respectively in 1999.[14] The amount needed to do so ranged from USD 0.11 million to USD 0.48 million.

While using only the returns form *waqf* may be feasible for small MFIs, this will seriously limit the growth of the Islamic MFI sector. This is apparent by observing that a large conventional MFI like Grameen Bank distributed more that USD 5 billion to over 5.5 million beneficiaries. Scaling up the activities of Islamic MFIs would require using *waqf* endowment itself for microfinancing. For example, if there is a *waqf* endowment of USD 10 million earning an average rate of return of 5 percent, an Islamic MFI can provide finance of an average amount of USD 100 to 5,000 poor entrepreneurs if only the returns are used. By using 90 percent of this endowment, however, the MFI can enlarge the coverage to 90,000 beneficiaries. Thus, f the scope of Islamic microfinancing has to be increased, then a significant part of the *waqf* endowment itself has to be used for microfinancing. This would require using appropriate risk management techniques to protect the endowment from decay.

6.1. Definitions and Operational Issues

In this section, we define the important variables and relationships. On the assets side, assume that the MFI allocates b percent of its assets A into low-risk fixed-income assets (F) earning a fixed-income r_f, and the remaining ($1-b$) for mircofinancing (M). The net-income from assets (R_A) of the MFI equals the sum of the returns from these sources. That is,

$$R_A = R_M + R_f, \qquad (5)$$

where R_M and R_f are net-returns from microfinance activities and fixed assets. While $R_f = r_f F$, estimation of net-returns on microfinancing involves various steps. Assuming ? is the average recovery (or repayment) rate in microfinancing activities, total revenue of the MFI equals the returns from investments (I) and loan or *qard* (Q). That is,

[13] For a discussion on withdrawal risks, see Chapra and Ahmed (2003) and Ahmed (2006).
[14] The actual figures for the MFIs were BDT 23,918,000 and BDT 5,402,000 provided by Al-Fallah and Rescue (exchange rate during 1999 was USD 1=50 BDT). See Ahmed (2002) for details.

$$TR= ?(r_I I+cQ), \qquad (6)$$

where r_I is the rate of return on investments and c unit cost of providing loan (estimated later in Equation 10). Like conventional MFIs, total costs of the Islamic MFI will include financing costs (BC) and operating costs (OC). The financing costs, however, will only include profit-share paid to depositors r_d, as no returns need to be paid on *waqf* funds used in microfinancing. Thus, the total costs of an Islamic MFI is,

$$TC = OC + r_d D. \qquad (7)$$

Assume that s percent of the microfinancing assets (M) are investments (I), so that (1-s) indicates the proportion given as *qard* (Q).[15] As costs of microfinancing operations are shared between *qard* and investments proportionately, s percent of the operating costs will be accounted for in arriving at the net-returns on investments (I). Thus, net-income $?_I$ of the Islamic MFI from investment activities (I) equals the difference between the revenue and its share of the costs.[16] That is,

$$?_I = ?r_I I - s(OC). \qquad (8)$$

Similarly, (1- s) percent of the operating costs will be ascribed to *qard*. Given that financing charges on *qard* can only cover actual costs of services, we get,

$$?_Q= cQ - (1 - s)(OC)=0, \qquad (9)$$

giving the service charge c on *qard* as,

$$c= (1 - s)(OC)/Q. \qquad (10)$$

To get a better understanding of the risks associated with liabilities and assets in a *waqf*-based MFI we take a closer look at the sources of financing of assets. As mentioned above, while financing of *qard* has to come from *waqf* funds, investments can be financed from both deposits and *waqf* endowments. Assuming d to be the proportion of investments (I) financed by deposits, the remaining (1-d) percent will be financed by *waqf* funds. Furthermore, in order to protect the corpus of the *waqf* endowment from erosion, b percent of it will be put in low-risk assets (F). These features are shown in the following relationships,

$$F=bW, \qquad (11)$$

$$Q+(1-d)I = (1-b)W, \qquad (12)$$

$$dI=D. \qquad (13)$$

From Equations 11 and 12 we get, $W=F+Q+(1-d)I$.

[15] A part of the assets are also held as cash. We are assuming this to be zero for simplicity as it does not change the results of the analysis.

[16] Note that the financing charges do not appear in net-income estimation as the returns on *mudarabah* deposits is not fixed and instead shares of profit resulting from operations of the MFI. The resulting profit-share of depositors is estimated by Equation 15.

The expected loss of the *waqf* endowment EL_W will have two components: the expected loss from *qard* operations (EL_Q) and that from investments (EL_I). Assuming uniform recovery rates on all microfinancing activities irrespective of the modes of financing giving the expected rate of default as (1- ?), the expected loss due to default or non-recovery of funds in investment and *qard* financing will be,

$$EL_{I=}(1- ?)r_I I. \qquad (14a)$$

$$EL_{Q=}(1- ?)cQ. \qquad (14b)$$

Assume that the *mudarabah* deposits stipulates a profit-sharing ratio of *m* percent in favor of depositors, so that (1-*m*) percent of the profit would go to the MFI. Noting that *d* percent of investments *I* are financed by deposits and the returns on these are distributed among the depositors and MFI at the ratio of µ/1-µ, the expected returns from investments (*I*) for depositors (R_d) and MFI (R_M) are given by,

$$R_d = md\, [?_I\text{-}EL_I] \qquad (\text{if } ?_I\text{-}EL_I<0, \text{ then } m=1) \qquad (15)$$

$$R_{MD} = (1\text{-}m)d\, [?_I\text{-}EL_I] \qquad (\text{if } ?_I\text{-}EL_I<0, \text{ then } (1\text{-}m)=0) \qquad (16)$$

Where $?_I$ and EL_I have been defined earlier in Equations 8 and 14 respectively. *Mudarabah* contract stipulates that the loss be borne by financiers only. Thus, Equations 15 and 16 profit-share changes to 1 when there is a loss. That is, if ($?_I$-EL_I)<0, then m=1 and (1-m)=0. The rate of return on investments for deposits can be estimated as $r_d = R_d/D$. Similarly, as (*1-d*) of the investment (*I*) is financed from *waqf* funds, the returns from this component of financing will be,

$$R_{MW} = (1\text{-}d)\, [\, ?_I\text{-}\, EL_I] \qquad (17)$$

From equations 16-17, we can get the total expected net-income from investments (*I*) for the MFI as,

$$R_M = R_{MD} + R_{MW} = [(1\text{-}m)d + (1\text{-}d)]\, [\, ?_I\text{-}\, EL_I] \qquad (18)$$

Note that R_M is the net-returns to the MFI from microfinancing as net-returns on qard equals zero.

6.2. Asset, Liability, and Risk Management Issues

Given the peculiarities of the asset, liabilities and *waqf* based capital, the Islamic MFI need to address some issues related to managing its risks. The allocation of portfolio into low-risk assets (*F*) and microfinancing (*M*), and then further into *qard* (*Q*) and investments (*I*) will determine the risks and returns of the MFI. Low-risk assets (*F*) provide a fixed-income. Microfinancing activity in the forms of *qard* and investments are riskier, with only the latter earning net-returns. Furthermore, nature of the *waqf* requires measures hat can keep the corpus of the endowment intact. While the overall return of the MFI will depend on the minimization of credit risk or the default rate (1- ?), different reserves (*T, P,* and *V*) play key role in managing the risks. Some risk management issues that are important for the sustainability of a *waqf*-based Islamic MFI are discussed next.

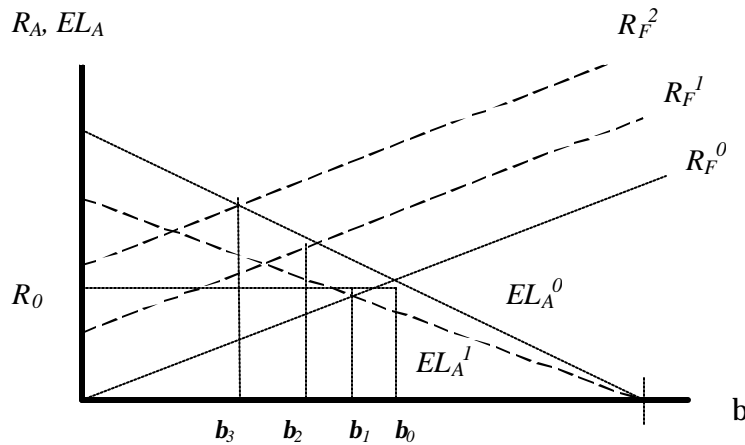
6.2.1. Depositors and Withdrawal Risks

Equation 15 indicates that as long as the net-returns from investments $?_I$ cover the expected loss from default EL_I, the returns will be positive. A higher default rate (1- ?) will make EL_I larger and can make net-returns negative (i.e., $R_d<0$ when $?_I<EL_I$). While in principle, deposits are *mudarabah* contracts and the loss should be borne by depositors, in reality MFI has to consider the withdrawal risk. A negative or low of rate of return may induce depositors to withdraw their funds from the MFI. To mitigate the withdrawal risk and avoid drainage of funds, the MFI has to ensure that the deposits pay a certain rate of return.

If the expected loss is greater than the returns on investment (i.e., $?_I<EL_I$), then given the *mudarabah* contract, all loss has to be borne by the financier. As shown in Equation 15, the loss component for the depositors is $L_d=(R_d=)\ d\ [?_I-EL_I]$, when $?_I-EL_I<0$. This loss can be covered by using the *takaful* reserves (*T*). By using these reserves to eliminate the losses, the returns to depositors can become positive. Furthermore, profit-equalizing reserves (*P*) can be used to make the returns competitive. As long as the MFI have accumulated enough *takaful* (*T*) and profit-equalizing (*P*) reserves to cover the expected losses (L_D), the depositors can expect a positive yield on their deposits and the MFI will be able to mitigate the withdrawal risks.

6.2.2. Risk and Returns on Waqf Endowment

Managing risks of using the *waqf* fund in various assets is more complex. Equations 11-13 indicate the distribution of *waqf* endowment in various assets (*A*) as $W=F+Q+(1-d)I$. Allocation of *waqf* fund into various assets will determine its risk and returns. For example, choosing a higher *b* or percentage of assets to fixed income low-risk assets (*F*) can lower the risks and ensure a minimum income of R_F. Such allocation, however, diverts funds from microfinancing limiting its scope. Thus, there is a trade-off between safety and scale of microfinancing operations. The way in which a balance can be struck is discussed below.

Figure 1: Portfolio Allocation into Low-risk Assets and Microfinancing

Using the definition of $R_F = r_f\ F$ and Equation 11, we get

$$R_F = r_f\, bA. \qquad (20)$$

Equation 20 shows the positive relationship between the return (R_F) and proportion (b) of on fixed-income asset component of the *waqf*-based MFI. As the fixed-income component share b increases, the income derived from this asset in the overall portfolio increases. This relationship is shown by the line R_F^0 in Figure 1.

As the *waqf* fund in microfinancing is used in the form of investment (I) and *qard* (Q), the default rates on both of these heads has to be accounted for. The expected loss for the *waqf* funds (EL_W) used in microfinancing is,

$$EL_W = (1\text{-}d)\, EL_I + EL_Q, \qquad (21)$$

where EL_I and EL_Q are define in Equations 14a and 14b. Assuming no expected loss on risk-free assets, F, the expected loss on the portfolio of the MFI will be,

$$EL_A = (1\text{-}b)\, EL_W. \qquad (22)$$

Equation 22 indicates that as proportion of low-risk assets b increases, the expected loss of the portfolio (EL_A) decreases. The negative relationship between b and EL_A is shown by line EL_A^0 in Figure 1.

Given the different features of assets an liabilities, the *waqf*-based MFI will allocate assets in such a way that the risk of decay of the endowment is eliminated. This can be done by choosing a proportion of low-risk assets F in such a way that the returns on these assets can cover the expected loss from microfinancing activities. This is shown in Figure 1 by the intersection of lines R_F^0 and EL_A^0. By choosing a proportion of low-risk assets b_0, the returns from these assets will be R_0 which will equal the expected loss from microfinancing (EL_0). The above analysis also indicates the following risk management policies for a *waqf*-based Islamic MFI.

1. If the default rate (1- ?) can be decreased by reducing the credit risk, the expected loss from microfinancing decreases. This is shown by a rotation of expected-loss line from EL_A^0 to EL_A^1. As a result, the proportion of low-risk assets required to sustain any expected losses goes down from b_0 to b_1, implying more funds can be used for microfinancing activities.

2. As *takaful* reserves (T) can be used to cover some of the losses due to default, an increase in these reserves would reduce the requirement of using income from low-risk assets to cover the losses. The effect of accumulation of *takaful* reserves (T) is shown by a movement of the low-risk asset return curve from R_F^0 to R_F^1 in Figure 1. With reserves, the MFI can hold a lower proportion of low-risk assets (b_2). Thus, as *takaful* reserves increase, the MFI will be able to use a higher proportion of the *waqf* funds for microfinancing.

3. Similarly, when the MFI accumulates economic capital reserves (V), the need to hold low-risk assets F will go down further as these reserves can be used to cushion part of the losses. This is shown by a movement of the of the low-risk asset return curve from R_F^1 to R_F^2, reducing the proportion of low-risk assets further from b_2 to b_3.

The above discussion shows that a larger proportion of the *waqf* endowment can be used for microfinancing if the MFI hold higher reserves. As reserves accumulate over time, it is expected MFIs will initially use more *waqf* funds in low-risk assets F and then gradually increase the proportion used for microfinancing (M) as time passes.

7. OTHER APPROACHES TO FUNDING MFI OPERATIONS

While the paper proposes the use of a *waqf*-based MFI to finance the poor, some other sources of funds can be used to further enhance the scope of Islamic microfinancing. Some of these sources are discussed below.

1. Along with *waqf* and *qard hassan*, the institutions of *zakah* and *sadaqat* can be integrated into microfinancing program to effectively alleviate absolute poverty. These traditional instruments of social welfare can be used in financing the poor entrepreneurs. Integrating *zakah* into microfinancing can prevent fund diversions and benefit the poorest beneficiaries (Ahmed 2002). *Zakah* given to the poor can be used for consumption, asset building, and productive purposes to complement funds of Islamic MFIs. As these complementary funds will reduce the need for diverting money for consumption and/or purchase of assets, it is expected the funds taken for productive activities will be invested accordingly. As a result, the overall return on invested funds is expected to be higher and the probability of default lower. Thus, integrating Islamic institutions of *zakah* and charities with microfinancing will increase the probability of repayment of the funds to the Islamic MFI.

2. The scope of Islamic microfinancing can also be increased by getting Islamic banks involved. Ahmed (2003) shows that Islamic banks are predisposed to provide microfinance in a "win-win" situation. It is argued that Islamic banks can provide microfinance at lower operating and financing costs. The operating costs of providing microfinance in case of Islamic banks will be much smaller than MFIs, and these institutions will provide microfinance from existing branches and not incur any extra fixed costs (rent, utilities, etc.). Furthermore, it will not require a whole range of professionals/employees, particularly at the top management level at the head office and regional offices. Similarly financing costs for Islamic banks is expected to be lower. Most Islamic banks have excess liquidity given the lack of Islamic compatible money-market instruments to park funds for shorter periods of time. Given this excess liquidity, the opportunity cost of using these funds is almost zero. These funds can be used for microfinancing as no extra cost. Thus, Islamic banks can finance microenterprises more efficiently (at a lower cost) than MFIs.

3. Additionally, Islamic banks can use income derived from late-payment penalties and other proceeds which it cannot include in its income (like interest earnings from treasury operations). Islamic banks can create a *waqf* from these funds and use these for microfinance operations. As suggested in point 2 above, Islamic banks will be able to provide microfinancing at a lower cost than MFIs due to lower operating and financing costs.

8. CONCLUSION

Eradication of poverty is considered an important objective of an Islamic economic system and its financial sector should reflect this goal. Islamic financial sector, however, has not been forthcoming in performing its social role. One way in which the social role of the sector can be manifested is to provide microfinance to poor entrepreneurs. There is a need to establish institutions that can fulfill the goals of Islam using both traditional concepts and newer tools and methods. This requires exerting concerted efforts by both researchers and practitioners to come up with workable solutions based on Islamic values and institutions. The paper presents a case for introducing *waqf*-based Islamic MFI that can provide microfinancing and facilitate wealth creation of the poor.

Microfinance initiative is widely acclaimed as a new approach to alleviate poverty and bring about development. The paper provides the theoretical basis and operational framework for alternative *waqf*-based Islamic MFI. It discusses the operations of conventional MFIs and examines their strengths and weaknesses. While conventional MFIs have successfully resolved the credit risk problem by instituting group-based lending and collecting weekly installments, the problems of moral hazard and economic viability need to be resolved. As group-lending and weekly repayments effectively mitigate the credit risk problem in financing the poor, these aspects can be adopted by the Islamic institutions providing microfinance. As Islamic modes of financing involve transfer of real assets/goods, use of these instruments by these institutions can lessen the problem of diversion of funds to non-productive. Furthermore, using *waqf* to finance MFI operations can reduce the financing costs and improve the viability of these institutions.

The paper discusses some of the risks that may arise in a *waqf*-based MFI. The MFI has to create various reserves to cover various risks arising due to the nature of its assets and liabilities. To protect from withdrawal risks, the MFI can use *takaful* and profit-equalization reserves to give depositors competitive returns. The paper shows that the proportion of *waqf* funds that can be allocated into microfinancing will depend on the *takaful* and economic capital reserves. A higher percentage of the *waqf* endowment can be used for microfinancing as these reserves held by the MFI increases. The paper also suggests some other sources of funds that Islamic MFIs can tap into to expand their operations. Other than using *zakah* and *sadaqat* as additional resources, Islamic banks can also provide microfinancing efficiently without cutting into their profits.

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